

**CANEY CREEK
WBID 3051**

Recreational Use Attainability Analysis

May 2007

PREPARED FOR:
RFP No: B3Z07134
Water Quality Monitoring & Assessment Section
Water Protection Program
Division of Environmental Quality
MISSOURI DEPARTMENT OF NATURAL RESOURCES
301 West High Street
Jefferson City, MO 65102

PREPARED BY:
MEC WATER RESOURCES, INC.
1123 Wilkes Blvd., Ste. 400
Columbia, MO 65201

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	Caney Creek K
Missouri Water Body Identification (WBID) Number:	3051
8-digit HUC: 08020204 - Little River District	County: Scott
Upstream Legal Description (from Table H):	36, 29N, 12E
Downstream Legal Description (from Table H):	9, 28N, 12E
Number of sites evaluated	7
List all sites numbers, listed consequently upstream to downstream:	Sites - 1, 2, 3, 4, 5, 6, 7

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	UTM X	Y
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

III. Discharger Facility Information (list all permitted dischargers on the stream)

Discharger Facility Name(s):	Benton WWTP
Discharger Permit Number(s):	MO 0055182

IV. UAA Surveyor (please print legibly)

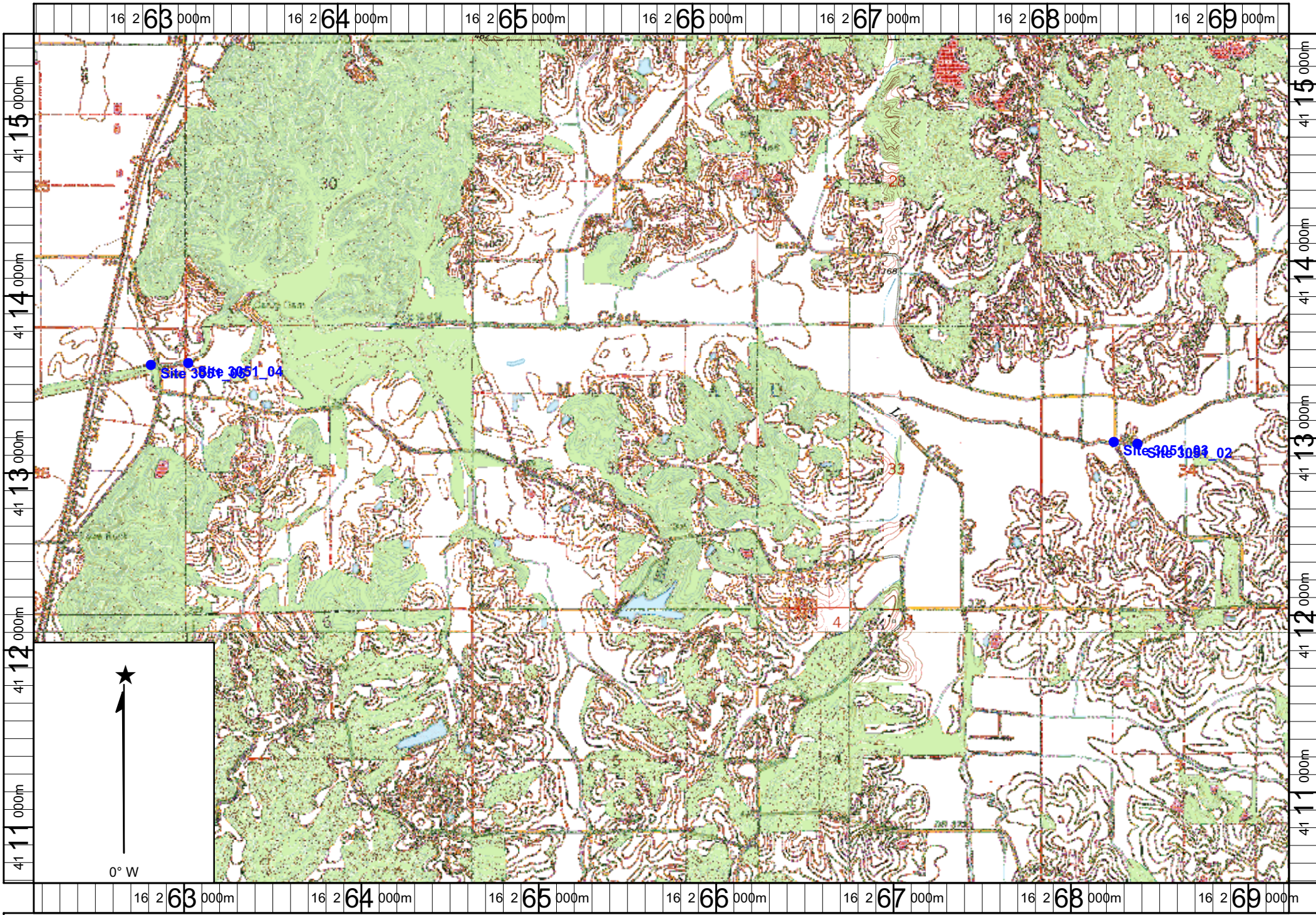
Name of Surveyor	Robert R. Bacon	Telephone Number:	(573) 634-7078
Organization/Employer:	ERC		
Position:	Field Manager		

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: Robert R. Bacon Date: 05-08-2007

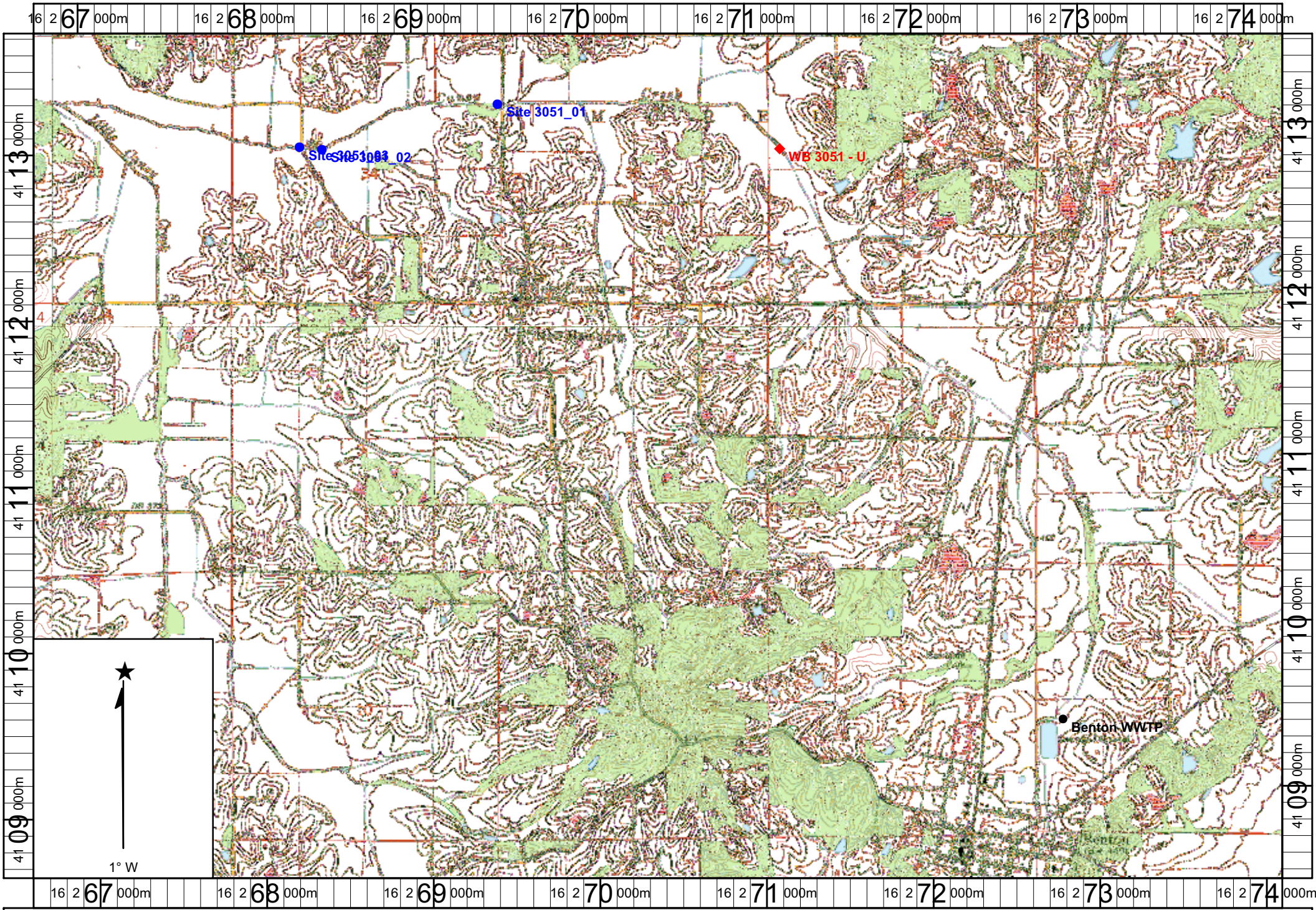
HUC 5-21-07

ERC 5/22/07



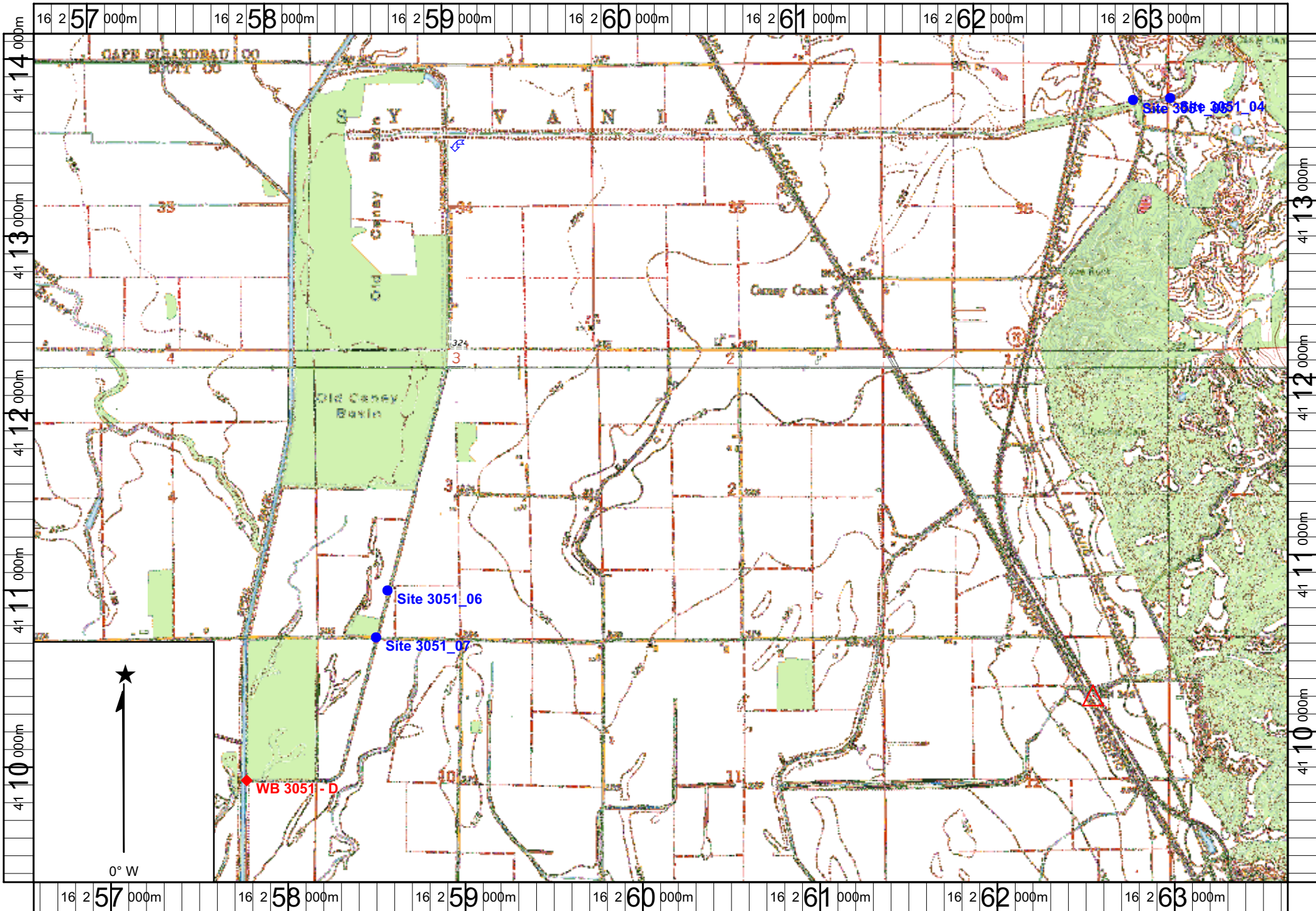
Name: CHAFFEE
Date: 5/22/2007
Scale: 1 inch equals 2222 feet

Location: 16 0265757 E 4112984 N



Name: MORLEY
Date: 5/22/2007
Scale: 1 inch equals 2353 feet

Location: 16 0270412 E 4111089 N



Name: ORAN
Date: 5/22/2007
Scale: 1 inch equals 2222 feet

Location: 16 0260168 E 4111646 N

WBID# 3051
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (must be completed for each site)

Date & Time: <u>5-8-07 18:22</u>	Site Location Description (e.g., road crossing): <u>downstream</u>
Personnel (Data Collectors): <u>Abby & Bob</u>	<u>Rt. 1 Hwy Bridge N of New Hamburg</u>
Current Weather Conditions: <u>Sunny, hot, clear 92°</u>	Facility Name: <u>Renton WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO0055182</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 3 0269515</u>		Y: <u>4113233</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters	
EPE	± <u>17</u> Feet or ± _____ Meters		
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>A31</u>	<u>Upstream</u> <u>TI</u>	<u>A30</u>	<u>Downstream</u> <u>TI</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments: Farm fields

WBID# 3051
Site# 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>None</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	100	% Mud/Clay	% Bedrock
----------	----------	--------	--------	-----	------------	-----------

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

No aquatic vegetation in stream channel

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>Turbid</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Robert A. Bacon Date of Survey: 5-8-07

Organization: ERC Position: Field Manager

ORC 5-21-07
AK 5/22/07

ERC Recreational Use Attainability Analysis Field Survey Sheet

CDA 031 - up @ (01-11)
030 - Down @ (01-01)

Waterbody ID: <u>3052/1AK</u> Site #: <u>01</u>		Water Quality Parameters	
Weather Conditions: <u>sunny few clouds 80°</u>		Dissolved Oxygen: <u>5.22</u> (mg/L)	
GPS Location: UTM X: <u>16S 0269915</u> UTM Y: <u>4113233</u>		Dissolved Oxygen: <u>66.2</u> (% sat)	
Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>17</u> (feet)		Specific Cond: <u>312</u> (µS/cm)	
Average Stream Width: <u>1.5</u> (meters)		Water Temperature: <u>27.53</u> (°C)	
Length of Survey Segment: <u>150</u> (meters)		Time: <u>18:22</u>	
Field Staff: <u>Abby + Bob</u>			

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	.0	.02	.0	.14	.0	.06	.0	.04	.0	.01	.0	.01	.0	.01	.0	.01	.0	.03	.0	.01	.0	.02
2	.14	.06	.14	.18	.16	.16	.14	.12	.22	.12	.2	.07	.14	.07	.12	.04	.2	.12	.08	.03	.13	.09
3	.28	.07	.28	.22	.32	.26	.28	.19	.44	.21	.4	.13	.28	.15	.24	.09	.4	.24	.16	.06	.26	.10
4	.42	.16	.42	.33	.48	.34	.42	.25	.66	.30	.6	.13	.42	.19	.36	.13	.6	.30	.24	.06	.39	.17
5	.56	.14	.56	.36	.64	.39	.56	.29	.88	.32	.8	.13	.56	.22	.48	.16	.8	.33	.32	.18	.52	.17
6	.7	.10	.7	.38	.8	.37	.7	.30	1.1	.35	1.0	.15	.7	.21	.6	.19	1.0	.29	.4	.18	.65	.17
7	.84	.08	.84	.37	.96	.36	.84	.30	1.32	.32	1.2	.13	.84	.21	.72	.22	1.2	.32	.48	.20	.78	.17
8	.98	.09	.98	.35	1.12	.32	.98	.25	1.54	.28	1.4	.13	.98	.13	.84	.19	1.4	.29	.56	.20	.91	.15
9	1.12	.05	1.12	.30	1.28	.28	1.12	.19	1.76	.27	1.6	.06	1.12	.12	.96	.13	1.6	.20	.64	.16	1.04	.13
10	1.26	.04	1.26	.14	1.44	.19	1.26	.13	1.98	.19	1.8	.04	1.26	.08	1.08	.02	1.8	.10	.72	.09	1.17	.08
11	1.4	.01	1.4	.01	1.60	.10	1.4	.05	2.2	.04	2	.01	1.4	.01	1.2	.01	2	.02	.80	.01	1.3	.02
12	1.5	.0	1.5	.0	1.6	.0	1.5	.0	1.6	.0	1.5	.0	1.5	.0	1.2	.0	1.5	.0	1.5	.0	1.5	.0
Feature Type (riffle, run, or pool)	run		run		run		run		run		run		run		run		run		run		run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: Abby + Bob

Date: 5/8/07

AK 5/2/07

AK 5-21-07

WBID# 3051
 Site# 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-9-07</u> <u>7:45</u>	Site Location Description (e.g., road crossing): <u>-downstream</u>
Personnel (Data Collectors): <u>Abby & Bob</u>	<u>@ county road 227 bridge</u>
Current Weather Conditions: <u>sunny, clear 78°</u>	Facility Name: <u>Benton WWTP</u>
	Permit Number: <u>MO 0053182</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 S 0268462</u>		Y: <u>4112989</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>24</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>A33</u>	<u>Upstream</u> <u>T11</u>	<u>A32</u>	<u>Downstream</u> <u>T1</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments: Farm fields

WBID# 3051
Site# 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>None</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	% Silt	<u>100</u> % Mud/Clay	% Bedrock
----------	----------	--------	--------	-----------------------	-----------

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

No vegetation in channel

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>Very turbid</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Robert D. Bacon Date of Survey: 5-9-07

Organization: ERC Position: Field Manager

7 w 5-21-07

CM 5/22/07

ERC Recreational Use Attainability Analysis Field Survey Sheet

4m 032 (02-11)
CDA up 033 @ (02-11)

Waterbody ID: <u>3051</u>		Site #: <u>02</u>	
Weather Conditions: <u>Sunny, Hazy</u>			
GPS Location: UTM X: <u>16S 0268452</u> UTM Y: <u>4112988</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 24</u> (feet)			
Average Stream Width: <u>2.5</u> (meters)		Length of Survey Segment: <u>150</u> (meters)	
Field Staff: <u>Abby + Bob</u>			

Water Quality Parameters	
Dissolved Oxygen:	<u>4.48</u> (mg/L)
Dissolved Oxygen:	<u>51.8</u> (% sat)
Specific Cond:	<u>.321</u> (μS/cm)
Water Temperature:	<u>22.47</u> (°C)
Time:	<u>7:39</u>

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	.01	0	.01	0	.01	0	.02	0	.03	0	.01	0	.01	0	.01	0	.02	0	.01	0	.01
2	.213	.21	.18	.13	.15	.05	.19	.05	.17	.10	.21	.09	.14	.08	.125	.07	.09	.09	.14	.05	.27	.12
3	.426	.32	.36	.29	.30	.07	.38	.04	.34	.17	.42	.16	.28	.17	.25	.12	.18	.18	.28	.15	.54	.21
4	.639	.32	.54	.47	.45	.11	.57	.10	.51	.20	.63	.17	.42	.22	.375	.17	.27	.21	.42	.18	.81	.33
5	.852	.45	.72	.53	.60	.10	.76	.29	.68	.21	.84	.19	.56	.32	.5	.20	.36	.22	.56	.16	1.08	.37
6	1.065	.45	.9	.54	.75	.12	.95	.36	.85	.20	1.05	.23	.70	.35	.625	.15	.45	.22	.70	.19	1.35	.38
7	1.278	.42	1.08	.51	.90	.12	1.14	.45	1.02	.28	1.20	.23	.84	.34	.75	.15	.54	.24	.84	.22	1.62	.45
8	1.491	.37	1.26	.48	1.05	.11	1.33	.47	1.19	.26	1.47	.26	.98	.32	.875	.13	.62	.22	.98	.22	1.89	.47
9	1.704	.27	1.44	.32	1.2	.12	1.52	.30	1.36	.28	1.68	.21	1.12	.22	1	.12	.72	.16	1.12	.18	2.16	.39
10	1.917	.13	1.62	.18	1.35	.12	1.71	.23	1.53	.18	1.89	.12	1.26	.14	1.125	.08	.81	.08	1.26	.15	2.43	.36
11	2.13	.02	1.8	.02	1.5	.01	1.9	.02	1.7	.02	2.1	.06	1.4	.01	1.25	.01	.9	.01	1.4	.02	2.7	.06
12																						
Feature Type (riffle, run, or pool)																						

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: [Signature]

Date: 5/9/07

APK 5/22/07

APC 5-21-07

WBID# 3051
 Site# 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-9-07 8:45</u>	Site Location Description (e.g., road crossing): <u>downstream of CR 227 Bridge</u>
Personnel (Data Collectors): <u>Abby IBB</u>	
Current Weather Conditions: <u>Sunny, clear 82°F</u>	Facility Name: <u>Benton WWTP</u>
	Permit Number: <u>MO 0055182</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 S 0268318</u>		Y: <u>4113003</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>21</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>A35</u>	<u>Upstream</u> <u>TII</u>	<u>A34</u>	<u>Downstream</u> <u>TI</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>Farm fields</u>				

WBID# 3061
Site# 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>None</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	<u>10</u> % Sand	% Silt	<u>90</u> % Mud/Clay	% Bedrock
----------	----------	------------------	--------	----------------------	-----------

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

--

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>Very turbid</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Bob A. Brown Date of Survey: 5-9-07

Organization: ERC Position: Field Manager

BWC 5-21-07
Mc 5/22/07

ERC Recreational Use Attainability Analysis Field Survey Sheet

CD-A 0-4 Down @ (03-01)
035 up @ (03-11)

Waterbody ID: <u>3051</u>		Site #: <u>03</u>	
Weather Conditions: <u>Sunny</u>			
GPS Location: UTM X: <u>1650268318</u> UTM Y: <u>4113003</u> Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>21</u> (feet)			
Average Stream Width: <u>2.00</u> (meters)		Length of Survey Segment: <u>150</u> (meters)	
Field Staff: <u>Abby + Bob</u>			

Water Quality Parameters	
Dissolved Oxygen:	<u>4.34</u> (mg/L)
Dissolved Oxygen:	<u>51.8</u> (% sat)
Specific Cond:	<u>319</u> (µS/cm)
Water Temperature:	<u>24.29</u> (°C)
Time:	<u>8:45</u>

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	0.05	0	0.10	0	0.04	0	0.02	0	0.01	0	0.01	0	0.03	0	0.05	0	0.03	0	0.01	0	0.03
2	.14	.15	.18	.19	.108	.05	.13	.08	.148	.04	.16	.10	.11	.07	.15	.05	.07	.12	.134	.11	.149	.08
3	.28	.16	.36	.29	.26	.27	.26	.17	.296	.05	.32	.12	.22	.12	.30	.15	.14	.14	.268	.11	.29	.09
4	.42	.08	.54	.37	.324	.27	.39	.19	.444	.08	.48	.10	.33	.16	.45	.21	.21	.57	.402	.16	.435	.09
5	.56	.17	.72	.40	.432	.33	.52	.23	.592	.11	.64	.09	.44	.17	.60	.23	.28	.19	.536	.18	.58	.19
6	.70	.21	.9	.46	.54	.32	.65	.26	.74	.14	.80	.10	.55	.18	.75	.30	.35	.20	.67	.17	.729	.21
7	.84	.22	1.08	.45	.648	.31	.78	.28	.888	.17	.96	.04	.66	.17	.90	.30	.42	.19	.804	.19	.87	.27
8	.98	.21	1.26	.44	.756	.33	.91	.26	1.036	.19	1.12	.03	.77	.12	1.05	.21	.49	.18	.938	.24	1.015	.26
9	1.12	.19	1.44	.29	.864	.35	1.04	.20	1.184	.19	1.28	.03	.88	.06	1.2	.15	.50	.17	1.072	.24	1.16	.26
10	1.26	.08	1.62	.22	.972	.32	1.17	.18	1.332	.11	1.44	.04	.99	.02	1.35	.10	.63	.13	1.206	.16	1.305	.23
11	1.4	.01	1.8	.03	1.08	.07	1.3	.04	1.48	.04	1.6	.01	1.1	.01	1.5	.01	.7	.06	1.34	.05	1.45	.07
12																						
Feature Type (riffle, run, or pool)																						

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

AKS/22/07

Signed:

Robert A. Wilmer
RWC 5-21-07

Date:

05/09/07

WBID# 3051
 Site# 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-9-07</u>	Site Location Description (e.g., road crossing): <u>upstream of CR 252</u>
Personnel (Data Collectors): <u>Abby & Bob</u>	Facility Name: <u>Renton WWTP</u>
Current Weather Conditions: <u>Sunny clear ~79°</u>	Permit Number: <u>110 0055182</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 S 0263110</u>		Y: <u>4113596</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>27</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>A36</u>	<u>Upstream</u> <u>T1</u>	<u>A37</u>	<u>Downstream</u> <u>T11</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>farm fields & two rural homes</u>				

WBID# 3051
Site# 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>none</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	<u>40</u>	% Silt	<u>60</u>	% Mud/Clay	% Bedrock
----------	----------	--------	-----------	--------	-----------	------------	-----------

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

no aquatic vegetation in stream

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>Very turbid</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Bolton D. Brown Date of Survey: 5-9-07

Organization: ERC Position: Field Manager

ARC 5-21-07
AR 5/22/07

ERC Recreational Use Attainability Analysis Field Survey Sheet

CDA: 036 up @ (04-11)
037 down @ (04-01)

Waterbody ID: <u>3051</u> Site #: <u>04</u> Weather Conditions: <u>Sunny, clear</u> GPS Location: UTM X: <u>16S 0263110</u> UTM Y: <u>4113596</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 27</u> (feet) Average Stream Width: <u>5.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) Field Staff: <u>Ally + Bob</u>	Water Quality Parameters Dissolved Oxygen: <u>5.56</u> (mg/L) Dissolved Oxygen: <u>67.0</u> (% sat) Specific Cond: <u>.298</u> (µS/cm) Water Temperature: <u>24.84</u> (°C) Time: <u>11:08</u>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	0.1	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01
2	.45	.22	.54	.18	.425	.16	.57	.16	.565	.20	.47	.12	.44	.22	.40	.24	.415	.15	.4	.10	.47	.10
3	.90	.30	1.08	.25	.85	.30	1.14	.38	1.13	.35	.94	.20	.88	.43	.80	.27	.813	.33	.8	.21	.94	.21
4	1.35	.45	1.62	.52	1.28	.34	1.71	.60	1.695	.41	1.41	.28	1.32	.59	1.2	.30	1.245	.42	1.2	.37	1.41	.34
5	1.8	.62	2.16	.62	1.7	.37	2.28	.64	2.26	.45	1.88	.28	1.76	.52	1.6	.47	1.66	.41	1.6	.45	1.88	.41
6	2.25	.53	2.7	.60	2.15	.52	2.85	.65	2.825	.39	2.35	.25	2.2	.50	2.0	.60	2.075	.47	2.0	.50	2.35	.60
7	2.7	.43	3.24	.58	2.55	.60	3.42	.62	3.39	.23	2.82	.26	2.64	.38	2.4	.53	2.49	.38	2.4	.51	2.82	.79
8	3.15	.54	3.78	.40	2.975	.55	3.99	.65	3.955	.29	3.29	.24	3.08	.32	2.8	.35	2.905	.38	2.8	.50	3.29	.90
9	3.6	.44	4.32	.39	3.4	.50	4.56	.59	4.52	.26	3.76	.20	3.52	.24	3.2	.14	3.32	.36	3.2	.37	3.76	.78
10	4.05	.28	4.86	.26	3.825	.22	5.13	.40	5.085	.22	4.23	.16	3.96	.18	3.6	.12	3.735	.15	3.6	.21	4.23	.42
11	4.5	0.2	5.4	.02	4.25	.02	5.7	.03	5.65	.01	4.7	.02	4.4	.02	4.0	.02	4.15	.01	4.0	.01	4.7	.01
12	-	-																				
Feature Type (riffle, run, or pool)	run		run		run		run		run		run		run		run		run		run		run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

AK 5/22/07

Signed: *[Signature]*

Date: 5-9-2007

ACE

5-21-07

WBID# 3051
 Site# 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-9-07</u> <u>14:00</u>	Site Location Description (e.g., road crossing): <u>upstream of CR 266</u>
Personnel (Data Collectors):	
Current Weather Conditions: <u>clear & sunny</u>	Facility Name: <u>Benton WWTP</u>
	Permit Number: <u>MO 0055182</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 3 0262879</u> Y: <u>4113590</u>			
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>26</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>A39</u>	<u>Upstream</u> <u>T11</u>	<u>A38</u>	<u>Downstream</u> <u>T1</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments: below

WBID# 3051
Site# 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>none</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	<u>85</u> % Silt	<u>15</u> % Mud/Clay	% Bedrock
----------	----------	--------	------------------	----------------------	-----------

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

no vegetation in stream channel

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>very turbid</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Robert M. Bacon Date of Survey: 5-9-07

Organization: ERC Position: Field Manager

ARC 5-21-07
AK 5/22/07

ERC Recreational Use Attainability Analysis Field Survey Sheet

038 Down @ (05-01)
CDA 039 Up @ (05-11)

Waterbody ID: <u>3051</u>		Site #: <u>05</u>	
Weather Conditions: <u>Sunny</u>			
GPS Location:			
UTM X: <u>165 0762899</u>		UTM Y: <u>4112590</u>	
Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>26</u> (feet)			
Average Stream Width: <u>6.10</u> (meters)		Length of Survey Segment: <u>150</u> (meters)	
Field Staff: <u>Abbey & Bob</u>			

Water Quality Parameters	
Dissolved Oxygen:	<u>5.53</u> (mg/L)
Dissolved Oxygen:	<u>66.5</u> (% sat)
Specific Cond:	<u>202</u> (μS/cm)
Water Temperature:	<u>24.68</u> (°C)
Time:	<u>11:40</u>

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	.02	0	.02	0	.02	0	.02	0	.01	0	.02	0	.03	0	.02	0	.02	0	.02	0	.02
2	.52	.36	.43	.26	.42	.19	.39	.25	.36	.19	.4	.30	.48	.22	.39	.14	.44	.12	.41	.11	.36	.08
3	1.04	.54	.86	.37	.84	.25	.78	.21	.76	.37	.8	.39	.96	.24	.78	.22	.88	.18	.82	.18	.72	.16
4	1.56	.65	1.29	.43	1.26	.33	1.17	.29	1.14	.42	1.2	.37	1.44	.19	1.17	.28	1.32	.29	1.23	.27	1.08	.21
5	2.08	.69	1.72	.47	1.78	.47	1.56	.30	1.52	.40	1.6	.41	1.92	.24	1.56	.28	1.76	.39	1.64	.29	1.44	.23
6	2.6	.65	2.15	.48	2.2	.51	1.95	.37	1.9	.37	2.0	.30	2.4	.30	1.95	.36	2.2	.45	2.05	.30	1.8	.23
7	3.12	.66	2.58	.44	2.62	.51	2.34	.40	2.28	.38	2.4	.33	2.88	.36	2.34	.37	2.64	.49	2.46	.29	2.16	.23
8	3.64	.69	3.01	.42	3.04	.50	2.73	.46	2.66	.35	2.8	.30	3.36	.38	2.73	.33	3.08	.46	2.87	.28	2.52	.12
9	4.16	.51	3.44	.41	3.46	.37	3.12	.40	3.04	.27	3.2	.24	3.84	.38	3.21	.30	3.52	.37	3.28	.25	2.88	.18
10	4.68	.24	3.87	.31	3.88	.17	3.51	.33	3.42	.15	3.6	.16	4.32	.21	3.51	.16	3.96	.20	3.69	.14	3.24	.14
11	5.2	.03	4.3	.02	4.2	.01	3.9	.01	3.8	.02	4	.03	4.8	.03	3.9	.02	4.4	.01	4.1	.03	3.6	.01
12																						
Feature Type (riffle, run, or pool)	Run																				riffle	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

MCS/22/07 Signed: Alvin C. G. [Signature] Date: 5/8/07
CWC 5-21-07

WBID# 3051
 Site# 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-9-07 14:35</u>	Site Location Description (e.g., road crossing): <u>Co. Rd. # 266 Downstream</u>
Personnel (Data Collectors): <u>Abby & Bob</u>	
Current Weather Conditions: <u>sunny w/ clouds</u>	Facility Name: <u>Benton WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0055182</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 S 0258610</u>		Y: <u>4110936</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters	
EPE	± <u>19</u> Feet or ± _____ Meters		
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>A40</u>	<u>Upstream</u> <u>T1</u>	<u>A41</u>	<u>Downstream</u> <u>T1</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>Deep mud farm fields</u>				

ID# 3051
c# 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>None</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No
If so, is there an obvious current? ☐ Yes ☒ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No
If so, is there an obvious current? ☐ Yes ☒ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	100	% Silt	% Mud/Clay	% Bedrock
----------	----------	--------	-----	--------	------------	-----------

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

most of the channel covered w/ emergent microphytes

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input checked="" type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Robert A. Brown Date of Survey: 5-9-2007

Organization: ERC Position: Field Manager

ORC 5-21-07
MC 5/22/07

ERC Recreational Use Attainability Analysis Field Survey Sheet

COA

up @ (06-11)
041 Down @ (06-01)

Waterbody ID: 3051 Site #: 06

Weather Conditions: sunny few clouds 84°

GPS Location:

UTM X: 16S 0258610 UTM Y: 4110936

Horizontal Accuracy Estimate (GPS Data Quality): +/- 19 (feet)

Average Stream Width: 5.0 (meters) Length of Survey Segment: 150 (meters)

Field Staff: Abbey & Bob

Water Quality Parameters

Dissolved Oxygen: 2.59 (mg/L)

Dissolved Oxygen: 34.9 (% sat)

Specific Cond: .479 (µS/cm)

Water Temperature: 32.54 (°C)

Time: 14:55

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	0.01	0	0.01	0	0.02	0	0.01	0	0.01	0	0.01	0	0.02	0	0.01	0	0.01	0	0.01	0	0.01
2	.45	.12	.44	.12	.45	.12	.46	.12	.46	.09	.47	.12	.45	.10	.44	.14	.44	.18	0.45	.44	.44	.20
3	.9	.20	.88	.22	.9	.22	.92	.24	.92	.13	.94	.20	.90	.15	.88	.19	.88	.20	0.90	.32	.88	.32
4	1.35	.19	1.32	.22	1.35	.15	1.38	.18	1.36	.16	1.41	.19	1.35	.07	1.32	.19	1.32	.22	1.35	.23	1.32	.30
5	1.8	.08	1.76	.08	1.8	.06	1.84	.16	1.84	.08	1.88	.20	1.8	.08	1.76	.22	1.76	.17	1.80	.22	1.76	.31
6	2.25	.06	2.2	.08	2.25	.08	2.30	.15	2.3	.07	2.35	.10	2.25	.07	2.20	.20	2.2	.15	2.25	.18	2.2	.21
7	2.7	.06	2.64	.10	2.7	.05	2.76	.10	2.76	.09	2.82	.10	2.7	.08	2.64	.19	2.64	.16	2.70	.18	2.64	.19
8	3.15	.10	3.08	.10	3.15	.05	3.22	.10	3.22	.11	3.29	.05	3.15	.13	3.08	.18	3.08	.18	3.15	.15	3.08	.21
9	3.6	.10	3.52	.10	3.6	.09	3.68	.05	3.68	.13	3.76	.09	3.6	.18	3.52	.17	3.52	.17	3.60	.17	3.52	.16
10	4.05	.10	3.96	.10	4.05	.08	4.14	.08	4.14	.06	4.23	.06	4.05	.16	3.96	.02	3.96	.10	4.05	.08	3.96	.11
11	4.5	.03	4.4	.03	4.5	.03	4.6	.03	4.6	.02	4.7	.02	4.5	.02	4.4	.02	4.4	.02	4.5	.02	4.4	.02
12																						
Feature Type (riffle, run, or pool)	run																				run	

glide pool

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

5/22/07

Signed:

[Signature]

Date:

5/9/07

MUC 15-21-07

WBID# 3051
 Site# 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (must be completed for each site)

Date & Time: <u>5-9-07</u>	Site Location Description (e.g., road crossing): <u>Co Rd. #266 upstream</u>
Personnel (Data Collectors): <u>Abby & Bob</u>	
Current Weather Conditions:	Facility Name: <u>Renton WWTP</u>
	Permit Number: <u>MO 0055182</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 S 0258539</u> Y: <u>4110672</u>			
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters	
EPE	± _____ Feet or ± _____ Meters		
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>A43</u>	<u>Upstream</u> <u>T11</u>	<u>A42</u>	<u>Downstream</u> <u>T1</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>Farm fields</u> <u>deep mud</u>				

WBID# 3051
Site# 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>none</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☒ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☒ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

% Cobble	% Gravel	% Sand	<u>100</u>	% Silt	% Mud/Clay	% Bedrock
----------	----------	--------	------------	--------	------------	-----------

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

most of the channel covered w/ emergent microphytes

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input checked="" type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: [Signature] Date of Survey: 5-9-07

Organization: ERC Position: Field Manager

ARC 5-21-07

ERC Recreational Use Attainability Analysis Field Survey Sheet

CDA 042 down @ (07-11)
043 up @ (07-11)

Waterbody ID: <u>3051</u>		Site #: <u>07</u>	
Weather Conditions: <u>Sunny - few clouds 83°</u>			
GPS Location: UTM X: <u>16S0258539</u> UTM Y: <u>4110672</u>			
Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 20</u> (feet)			
Average Stream Width: <u>4.5</u> (meters)		Length of Survey Segment: <u>150</u> (meters)	
Field Staff: <u>Alamy & Bob</u>			

Water Quality Parameters	
Dissolved Oxygen:	<u>3.27</u> (mg/L)
Dissolved Oxygen:	<u>44.0</u> (% sat)
Specific Cond:	<u>.487</u> (µS/cm)
Water Temperature:	<u>31.08</u> (°C)
Time:	<u>19:02</u>

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
1	0	.01	0	.02	0	.01	0	.01	0	.01	0	.02	0	.03	0	.03	0	.02	0	.02	0	.02
2	.17	.05	.29	.07	.38	.05	.39	.07	0.40	.07	.38	.13	.36	.18	0.40	.19	0.41	.29	.38	.30	0.40	.32
3	.34	.08	.58	.07	.76	.09	.78	.19	0.80	.18	.76	.18	.76	.18	0.80	.19	0.82	.21	.76	.22	0.80	.30
4	.51	.10	.87	.15	1.14	.06	1.17	.32	1.20	.28	1.14	.29	1.14	.25	1.20	.20	1.23	.27	1.14	.27	1.20	.28
5	.68	.10	1.16	.15	1.52	.07	1.56	.18	1.60	.32	1.52	.30	1.52	.29	1.60	.32	1.64	.29	1.52	.26	1.60	.28
6	.85	0	1.45	.01	1.9	.06	1.95	.32	2.00	.35	1.9	.31	1.9	.28	2.00	.32	2.05	.30	1.90	.26	2.00	.26
7	1.02	0	1.74	0	2.28	.11	2.34	.24	2.40	.12	2.28	.30	2.28	.28	2.40	.33	2.46	.29	2.28	.26	2.40	.25
8	1.19	.01	2.03	0	2.64	.10	2.73	.16	2.80	.12	2.66	.24	2.66	.25	2.80	.28	2.87	.28	2.66	.20	2.80	.19
9	1.36	.01	2.32	0.1	3.04	.10	3.12	.14	3.20	.12	3.04	.24	3.04	.22	3.20	.20	3.28	.19	3.04	.18	3.20	.16
10	1.53	.01	2.61	0.1	3.42	.07	3.51	.08	3.60	.06	3.42	.13	3.42	.13	3.60	.16	3.69	.14	3.42	.12	3.60	.14
11	1.7	.01	2.9	0.1	3.8	.01	3.9	0.1	4.0	0.1	3.8	0.1	3.8	.03	4.0	.03	4.1	.01	3.8	.01	4.0	.01
12	4.8	0	3.5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feature Type (riffle, run, or pool)	run																					

Slide Pool

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: Alamy & Bob Date: 5/9/07
Run C 5-21-07

WBID# 3051



Site# 1 Photo ID# A31, Upstream



Site# 1 Photo ID# A30, Downstream



Site# 2 Photo ID# A33, Upstream



Site# 2 Photo ID# A32, Downstream

WBID# 3051



Site# 3 Photo ID# A35, Upstream



Site# 3 Photo ID# A34, Downstream



Site# 4 Photo ID# A36, Upstream



Site# 4 Photo ID# A37, Downstream

WBID# 3051



Site# 5 Photo ID# A39, Upstream



Site# 5 Photo ID# A38, Downstream



Site# 6 Photo ID# A40, Upstream



Site# 6 Photo ID# A41, Downstream

WBID# 3051



Site# 7 Photo ID# A43, Upstream



Site# 7 Photo ID# A42, Downstream